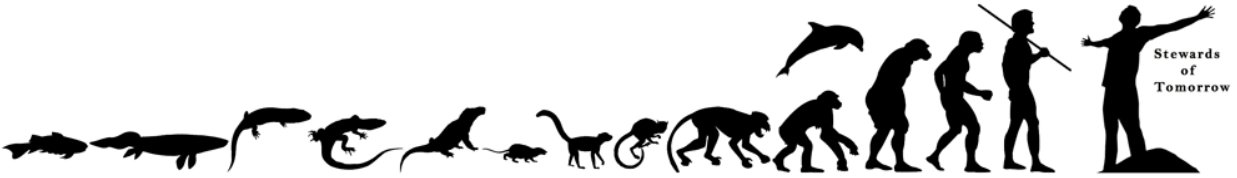


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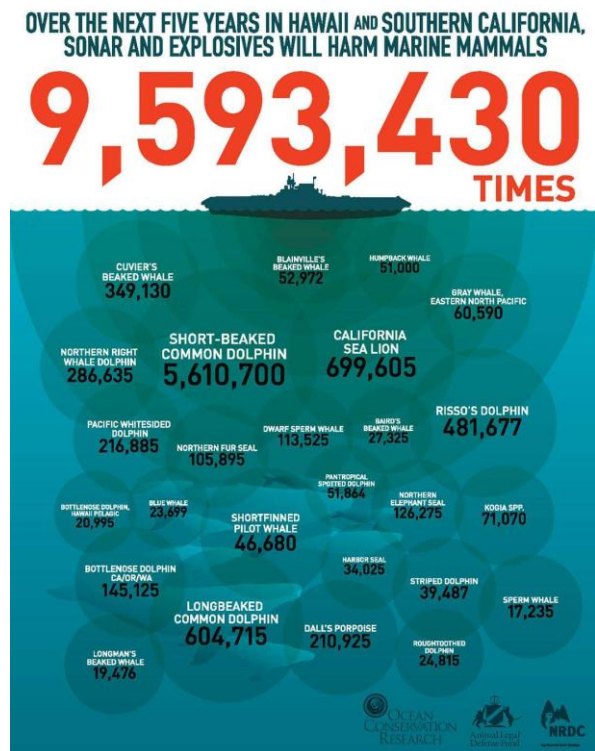


International Dolphin Enrichment Association

An association to enrich and improve all Cetacean (and Human) lives

IDEA is open to all concerned with the Cetacea. We invite those who seek to reestablish and continue our long history of partnership with the Cetacea to join us. Humans and Cetacea can both have richer sovereign lives.

The Cetacea face many threats like too little food (e.g. the J-Pod Orcas), pollution, geoexploration, fishing, military activity and whaling by a few nations. As part of preserving, enhancing, and expanding our evolving partnership we must secure our rights to have consensual interaction among humans and the Cetacea. This permits learning from each other, as we have done throughout the ages.



For too long the humans involved with Cetacea have remained divided over issues such as having Cetacea in human care. We support John Lily's view that we could be united. For a

perspective on the current situation, consider that the some 4000 Cetacea under human care planet-wide approximates the number of Cetacea who are killed by human activity *every day!*

We can all stand together united through our love of the Cetacea, and our mutual intent to insure that all Cetacea are as well provided for as possible, be they free or under our care. It is time that we all came together and worked these matters out.



It can be argued that oceanaria may be crucial to Cetacean species survival now and in the future, e.g. Dolphin Discovery's project to save the Vaquita.

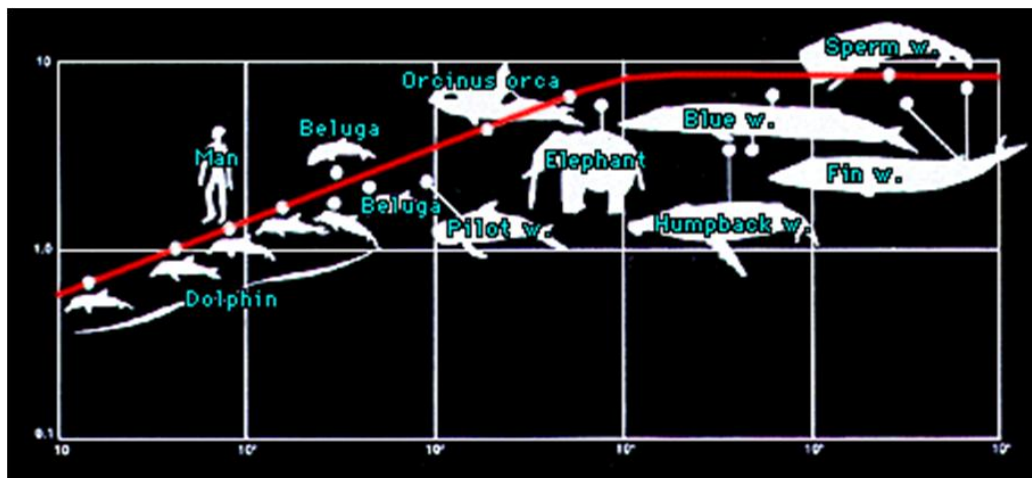
Let us unite to solve ALL these issues for the whole of Earth.

Let us become one united voice that stands with the Cetacea.

One may ask: "Why is this important?"

WHAT IF one saw the Earth for the first time, as an ET might see us? They would first note that the planet is about 73% water. In the water are whales with the largest brain on the planet – the sperm whales, and the largest creature on Earth, the Blue Whale. As well, there are some 80? other species of whales and dolphins, many of whom have especially large brains.

On closer inspection, the ET would notice the humans with their widespread cultures on land and who are quite intelligent, considering their small brain sizes. After all, the sperm whale brain is 6 times larger than the human or the humpback with about 5X our brain size and the Orca with about 3X our size.





Lilly and a Sperm Whale Brain

also requires a larger body. In fact, all the species shown on the graph cluster near and just below the red line which is the safe acceleration zone. **So one can conclude that all these creatures, including humans, have brains as large as they can be for the size of their body.**



Dolphins, Palace of Minos, Crete

The ET would note that the Cetacea and the Humans both have languages. On further inspection, it was also clear that while some of the humans hunted the whales at least from 18,000 years ago till the present, there were also humans that partnered with the Cetacea, especially the dolphins.

The Great Oneness

Some time ago, Lauren Eiseley wrote an essay about the dolphins called “The Long Loneliness” in which he suggested that humans have been searching for someone to talk to, to share our universe with. Based primarily on John Lilly’s work, he names the dolphins as a likely partner, especially should we develop full communication. Star Newland said that when this happens, it will begin the “*Great Oneness*” between our species.

For those who have yet to learn about this we will briefly summarize why we share these points of view.

First of all, the dolphins and whales, the Cetacea, are warm-blooded mammals who birth their young live and suckle them with milk. They are very similar to us, being fellow mammals. The Cetacea have the largest brains of the planet with the sperm whale having the largest brain about six times larger than our own. The dolphin brain is about 40% larger than the human brain and has similar neural complexity with about 20% more association cortex. Lily and Morgane showed this in the early 60’s. This implied the possibility that dolphins and the larger Cetacea might have intelligence comparable to or exceeding the intelligence of humans.

It is certainly true that such a conclusion challenges the traditional view that humans are the pinnacle of creation and alters our view of ourselves – this may be a reason that such data and results have yet to be widely accepted.

Nonetheless, experience shows us that the dolphins, in particular, have a high intelligence and are self-aware, sentient, have a complex language of their own, and show great proficiency at communication experiments, notably in the work of Louis Herman. Lilly found that the dolphins could imitate English by speaking through their blowhole in the air and the dolphins Elvar, Tolva, and Peter became quite good at this. Sadly, the experiments were ended before language comprehension was fully demonstrated. In the process they discovered that the dolphins have a short-term memory of up to 12 items, whereas humans have only 5+ or -2. This is one example where dolphin exceed human performance. Markov and Ostrakaya showed that the dolphin language has a possible trillion “words” compared to our languages with about 100,000 words.

Over the years we have found that dolphins have a culture which is transmitted from generation to generation, and in some cases, use tools, like using a sponge to guard their beaks when they are searching for fish in the sand.

Obviously dolphins are dexterous at swimming, diving, leaping and other acrobatics. Their hearing is acute with reception out to at least 300 kHz (cycles per second) and have a highly developed sonar system.

Our assessment of them is hampered by our differences – they live in the water and we on land. We have hands, they, flippers. Still, it is widely acknowledged the dolphins have intelligence comparable to ours and which exceeds ours, at least in some aspects. The Sperm whale almost certainly exceeds our intelligence. Some dispute this saying that one needs a larger brain just to run a large body. This is simply wrong. In fact, the same size of motor-limbic structures are found in humans and dolphins and these structures are about the same size throughout the Cetacean species. So the truth is that the motor-limbic areas, our basic “minicomputer” is comparable in humans, dolphins, and whales.

The major brain expansion seen in whales with larger brains is an increase in the neocortex – the brain layer involved in complex thought. While there are many criteria used to assess the quality of brains, the size of the neo-cortex is a reasonable measure; one must consider that the large whales, especially the sperm whale, are highly intelligent and likely more intelligent than any single human.

A unique characteristic of the cetacean is that they are conscious breathers. Each breath is a conscious act. They also sleep but only with one hemisphere at a time. This means that dolphins and other Cetacea are continuously awake, at least with half their brain.

The above descriptions are some of the many reasons that the Cetacea, especially the dolphins, are of great interest to us. Here we have extraterrestrials (since they live in the water) that are comparable to or exceed our own intelligence, and that are already here on our planet. So if you want to talk to ET’s there is now an opportunity. Perhaps we should get good at

communication with the Cetacea in anticipation of the day when we meet ET's from other parts of the universe.

In summary, the Cetacea embody all the characteristics that we used to define ourselves as human – large brains, intelligence, self-awareness, tool use, language, and culture. As we have seen, given their large brain sizes, they may exceed own capabilities.

We realize that the above discussion is novel to many and challenges our usual perception of our place in the universe. We realize that, overall, these data challenge the idea that humans are the paragon of animals, uniquely endowed with consciousness and intelligence by God, as stated in many religious views.

The Singularity

In artificial intelligence research, there are some who seek what has been called quote the similarity of quote the “singularity” this is the name given to a point in time when machine intelligence will exceed our own. Ray Kurzweil, for example, predicts this will happen by 2045

Arthur C. Clark, a science fiction author, once said “the super intelligent computer is the last invention we have to make.” He thought that the super intelligent computers might keep us as pets. So in this context we suggest that, if there are Cetaceans that exceed our intelligence, which is likely, e.g. the sperm whale, then – since the whales who have had their marvelous large brains at least for 13 million years – the “*singularity*”, the development of intelligence beyond human – already occurred long ago.

In this case, we feel it is important to communicate with these awesome creatures. What might we be able to learn from them? Might they remember our history over a vast range? Just to mention, a researcher told us that radio missions from Sperm whales were detected by the Vela-9 satellites. Since the spermaceti organ or “melon” of the Sperm whale is piezoelectric, then, when it is vibrated by sounds, it creates electric fields. The melon of a Sperm whale is about 550 gallons of fine oil, and the sound power of the sperm whale clicks is huge. So it is possible that the sperm whales communicate by radio! We already know that they can detect each other's sounds halfway across the planet! Therefore, it is possible that the whales have had an acoustic and radio-based global “*internet*” for some 13 million years already! These are some of the reasons we should communicate and learn from them.

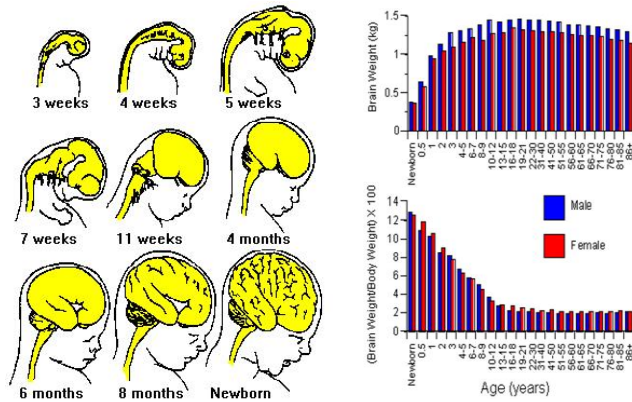
Humans are Aquatic

Humans have many aquatic characteristics, which include the shape of our noses, which prevents water going into the throat when we dive. In addition we have subcutaneous fat (blubber) for insulation. We also lack hair, another characteristic we share with diving mammals. The breasts are shaped and positioned for suckling babies in water at the surface. It is also known that oils occurring in fish, like eicosanoic acid are *required* for proper brain

development. This is an odd requirement given our supposed development from tree living ancestors. We swim, dive to about 500 feet, and can hold our breath for about 10 minutes.

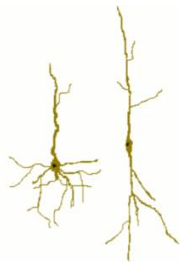
In addition, we can birth in the water – babies swim while still on the umbilical cord. Babies birthed and raised in the water are able to sleep in water. Such babies also develop faster and may have larger brains. Babies raised in the water are fully mobile from birth. They have abundant “baby fat” that makes them buoyant in the water until it is lost about the time they start to crawl on land. We also require iodine in the diet which implies that our ancestors lived in a marine environment that is rich in iodine.

All of the above traits and more show that we are marine aquatic mammals. This implies that our babies born on land have been denied their birthright of birth into the water and being raised around water.



Underwater births are safer for the mom and baby especially because the head to body weight ratio is largest at birth. This means that the head is large on a small body at birth, making the brain most at risk of acceleration damage at birth. Birth into water helps damp accelerations to the head, which protects the brain.

Spindle cells



A special neuron, called the spindle cell, is found in humans and the great apes. They are involved in play, creativity, and traits like perfect pitch. The larger the brain, the higher the percentage of spindle cells. Humans, for example, have about three times the percentage of spindle cells as the bonobo’s. Surprisingly, the only other species that have spindle cells are the Cetacea! How we come to have these cells as well is a mystery, and implies a close relationship with the Cetacea.

Human-Dolphin Genetic Similarities

Busbee at Texas A&M studied the similarity of human and dolphin chromosomes. He found that human and dolphin chromosomes are very similar – in fact – ***the dolphin genome is more similar to the human genome than any other creature!*** The first 13 of the dolphin chromosomes are virtually identical to their human counterparts and the 14th to 22nd dolphin chromosomes are largely rearrangements of the first 13. This shows that the human genome

contains virtually the entire dolphin genome. Again, the similarity is both surprising and a great mystery.

Why are Dolphins and Humans Attracted to One Another?

In sociobiological studies, it has been found that altruistic behavior is provided proportional to the degree of genetic similarity. For example, E. O. Wilson showed this in ants and it appears to hold for many situations. Therefore, we suggest that one reason dolphins and humans are attracted to one another is because they are closely related genetically. This also implies the sharing of altruistic behaviors. This genetic similarity may be the basis for dolphins protecting and rescuing people as well as for the history of dolphins helping humans in their fishing, and in guiding our boats, etc.

Lilly said that the most important thing he learned about the dolphins was that **they were ethical beings that put humans in a special class and went out of their way to keep humans safe**. This behavior appears to have a strong genetic and historical, and perhaps evolutionary basis.

We suggest that aquatic humans, birthing underwater in the sea, would be safer with dolphins around to ward off sharks and the like. Given our historic partnerships, exemplified by the ancient Greeks, it is likely that humans and dolphins have been partners for thousands to millions of years and therefore, humans and dolphins have coevolved together. All of the above suggests our partnership is a deep and long term relationship.

There are several cultures that express our aquatic nature, among them the Ama divers of Japan, who gather abalone, clams, and oysters, by diving. The Balaut of Indonesia and the Philippines, almost live in the water, and have even learned to see clearly underwater without a mask or goggles. The aboriginal tribes of Australia fish with the dolphins and the dolphins are fully integrated in their lives as equals.¹

The aboriginals have a long history extending for a minimum of 50,000 years and perhaps 250,000 years or longer incorporating this knowledge suggests that there were many “*sea people*” interacting with the dolphins. Much of this history has been lost to us and was never properly recorded. Similar relationships still exist in the Amazon with freshwater dolphins and the tribespeople there.

When we combine these data with the known Delphic Tradition of the Greeks, we can see an outline of our cultural links to the dolphins that have existed for millennia. We suggest, therefore, that humans and dolphins have co-evolved through these interactions. We, in fact, have a **shared** culture. In the Western world, this tradition, operating up to the time of Aristotle, was largely forgotten or thought mythical up to the pioneering work of Lilly and others in the modern era.

Now we are reviving these relationships in a movement we term the “Delphic Tradition brought forward”. Millions of people now watch the whales and swim with dolphins. Along with this, many are learning from dolphins and whales and are inspired to deep concern for the oceans and their inhabitants.

Some regulation of these trends may be needed, however, the current proposed NOAA changes go much too far, in our view. In fact, imposition of such rules violates and hampers a cultural exchange between humans and dolphins that has a long, rich history. We appreciate the good intent of the NOAA efforts, however, it completely ignores our traditional partnership with dolphins and other Cetacea.

Besides the cooperative fishing, guiding boats, taking children to school, as described by the Greeks, there is a deep shamanic aspect. For example, Pliny describes cooperative fishing with the dolphins, followed by a party. The dolphins hung around the docks sharing in the catch. Then a fisherman shared “*bread soaked in wine*” with the dolphins. Wine was a carrier for drugs and entheogenic compounds. Therefore, the relationships with dolphins included our sharing of these most precious sacraments with them.

Another example of our deep connection is the story of chief Joseph of the Lummi people of northwest North America. Knowing that the Orca was Joseph’s totem animal spirit, his father took Joseph to meet the Orca’s one night in a canoe when Joseph was about age 4. The Orcas came up to the boat and Joseph was put into the water with them. His father then returned to shore. Joseph stayed with Orcas all night and was returned to shore the next morning.

Given these known relationships, NOAA must consider this history in their deliberations; it is our view that these cultural exchanges are valuable and must be preserved, enhanced, and expanded.

Dolphin Assisted Therapy as Enrichment

Dolphin assisted therapy was initiated by Dr. Henry M. Truby in 1973 when he took two autistic children to see the dolphins at Miami Seaquarium. The children’s attention span increased from about five minutes to about an hour and a half, and at one point the children were cooperating to feed the dolphins and pour water over their heads. From then it was developed by Betsy Smith and Robert Nathanson who has an extensive program of Dolphin Research Center at Grassy Key, Florida. Now we have documented improvement of some 500 conditions with dolphin assisted therapy, including autism, cerebral palsy, and angina, microcephaly, improved vision, improvement in hemiplegia, paralysis, and of quadriplegia, and various knee and neck issues. This is extensive enough results that if it were generally accepted it would change the face of medicine.

Since dolphins, both free and under human care sometimes spontaneously initiate therapeutic behaviors, we suggest that such interaction can be enriching for the dolphins.

Modern Dolphin Interactions in Hawaii

There is ongoing interaction with dolphins in Hawaii that has existed for some 30 years. Some 100 local members of the community around Captain Cook have swum with the dolphins on a regular basis for years. In some cases, they see the same dolphins and there are friendships. Games have developed, such as “the leaf game.” The dolphins seem to share a special interest in pregnant humans. In some cases the dolphin moms bring their babies to see us. Sometimes they leap and spin and we feel they are entertaining us. Clearly, they come close to us *when they choose* and leave *when they choose*.

Sometimes a dolphin starts about 20 feet away and makes eye contact and then starts to circle and move closer, circling faster and faster until they are about 3 feet away and circling faster than we can spin in the water - the “*how fast can you spin?*” game.

In my 25 year span of swimming with the spinners and sometimes with the spotted dolphins or the bottlenose dolphins here in Hawaii, I have yet to see annoyance, or any aggressive act whatsoever. Therefore, there has yet to be observations of stress shown by the dolphins caused by the human presence.

The people who swim with the dolphins and take great interest in them call themselves “Dolphinville.” Joan Ocean, Doug and Trish Regan, and Celeste Eaton, added up their interaction times with the dolphins and concluded that they had accumulated some 57,000 hours of dolphin contact. They too, have yet to observe any aggression, annoyance, or signs of stress.

NOAA must consider these and other observations as part of including the community input as “*Citizen Science*”

With all due respect to the researchers supported by NOAA, they have only observed from the shore, by telescopes from cliffs, and from boats. They have yet to observe the behavior in the water, directly. Therefore the current conclusions are only based on partial data. To meet the standards of best available scientific evidence, they *must* observe in the water and/or accept the knowledge of those more experienced who have interacted directly with the dolphins *in the water*.

NOAA presents data concerning dolphin numbers based on knowingly crude measures and still states that dolphin numbers have decreased. Boat operators here observe more dolphins based on their daily observations over years. Even if we were to accept that there has been a decline in numbers, NOAA has *zero causal* evidence of what has caused this supposed decline. To attribute the decline to boats and swimmers is just a guess, and could be a “*correlation is causation*” fallacy.

The community of Dolphinville plus hundreds of guests from across the planet is, in fact, the largest single multi-year on-going interspecies communication project on the Earth – having persisted for a quarter of a century.

We agree with Lily that “*Communication with the Cetacea is the highest achievement to which humanity can aspire*”

Therefore this ongoing anthropological study deserves to be studied and encouraged!

In an environment where the Navy can harass thousands of Cetacea and be given a free pass by NOAA issuing a ruling that this is a “*negligible impact*”, then, surely, a few hundred swimmers and a few boats doing their best to be respectful of our dolphin friends can be given a permit to continue their important work and reestablish our traditional partnerships.

There are other native traditions beyond the Hawaiian. Barry Brailsford has recorded Maori legends detailing their interaction with the whales. The whales are described guiding their canoes to find an island to the south near Antarctica. The story has to do with delivering a sacred stone to the island guided by the humpbacks and assisted by the sperm whales. “*We are of the whales and the whales are of us. All is one.*”

Many cultures on the earth including the Greeks, Hindus, Sumerins, Chinese, Dogon, and Hopi all say that their cultures were founded utilizing knowledge from creatures that were in the sea. For example the first incarnation of Vishnu was as a dolphin. Therefore there is a planet-wide tradition that honors the people of the sea represented by the dolphins.

The essence of enrichment is to honor the sovereignty of the beings that are being enriched - we must honor their choices and their agency. Given the long history of human-dolphin interaction, we conclude that there have been, and are, many cases where dolphins choose to interact with humans. Therefore we suggest that before any rules are imposed that prohibit swimming with dolphins, let us suggest that being with humans enhances dolphin lives. They choose to be with us **when they wish to be**. To remove humans from the equation by arbitrary rules violates the dolphins’ free choice sovereignty!

We contend that humans and dolphins are enriching each other’s lives and are simply continuing a long tradition of friendship that stretches back to our very evolution as aquatic mammals.

To forbid this upsets a relationship that existed before there were nations, governments or rules. Let us be free – we assert the right of free association weekly between consenting species.

Hawaiian culture with the Dolphins

While many Ohana of Hawaii have little association with the dolphins, some have long traditions of interaction. For example there is cooperative fishing around the world. We have learned from fishermen here that they used to go fishing and each day, the dolphins arrived and guided the boats to good fishing areas. The dolphins basically controlled how much was caught and each fisherman had enough to feed his family each day.

One of our late Kahuna colleagues, Poppa “K” Kepalino described to us that he, his father, and grandfather, were essentially midwives. They took ladies into the sea, put their arms under the armpits of the woman, who would then proceed to give birth in the presence of dolphins. Papa-K told us that sometimes, one or two dolphins would come forward and help massage the baby out. We were wondering about dangers such as sharks. Poppa said that the dolphins kept them away. We were also wondering if the water might be too cold and he said that the dolphins could “*warm the water, the mom, and the babies.*” This is a remarkable observation. In this case, we have personal experience of being warmed by a dolphin when we were quite cold, so we can corroborate his experience with our own.

We asked how many dolphin attended births were performed? He answered “*many many.*” So we see from this that close relationships with the dolphins were maintained by some Ohana’s in Hawaii and therefore, such relationships are part of the Hawaiian cultural tradition. One must consider this in any NOAA rulings. Rules that prevent such interaction ignore the experience of the local culture. Therefore, we conclude that any rules implemented must allow such traditions to continue and that any NOAA rules are trumped by existing cultural practices.

Dolphins and Underwater Birth as Enrichment

In the 70’s, Igor Tscharkofsky in Russia and Dr. Michel Odent in France developed waterbirth. Water births were found to be easier for the mother and the baby and as mentioned above, the babies developed faster than hospital birthed babies.² As of this current writing, hundreds of thousands of underwater births have been performed with positive results and as far as we know, perhaps only 3 somewhat poor outcomes. In all cases so far, the babies have been fine. The UK health service now even recommends water birth for those expecting difficulties.

Given the positive results of dolphin assisted therapy, some researchers became interested in involving dolphins with the water birth process, on the thought that if dolphins could apparently improve various medical conditions, perhaps they might improve birth outcomes.

In the Black Sea, Elena Tonetti performed something like 100 births in the sea with dolphins nearby. Tonetti reports, as well, that all the babies born in the presence of dolphins were ambidexterous.³ Similar births were done elsewhere over the years, for example, under the leadership of Dr. Gowri Motha, Estelle Meyers, and others. These early reports stimulated

extensive interest, but there has yet to be a place where births with dolphins in attendance on a regular basis. Preliminary results strongly suggest that this concept be realized.



Dolphin Birth Assistance (left) and Dolphin Rearing Assistance (right), a part of our evolving partnership

Dolphins and Underwater Birth in Hawaii



Star Newland

Inspired by Estelle Meyers and John and Toni Lilly, Star Newland, operating under the Human-Dolphin Foundation and the Sirius Institute, came to Hawaii in 1991 to investigate interspecies communication with the dolphins and explore underwater birth with the dolphins. While she accomplished many things in Hawaii, her interest in birth with the dolphins was realized on August 18, 1992 when she gave birth on to her son John Kehena on Kehena Beach with some 300 dolphins waiting off-shore.



John Kehena's birth

The logistics of birthing in the sea with free dolphins proved daunting. She went on to assist 25 couples who swam with the dolphins during pregnancy which we termed pre-birth dolphin contact. We have yet to actually birth in the sea with the dolphins because 25 births in a row all have happened at night. Star and the parents were happy with their experiences and all the births were easy, natural, with zero complications. The parents are pleased with their children. While there is more to study, one noticeable occurrence was that four of the children were making clicks and whistles as part of their first sounds. See: Exploring the influence of Pre-Birth Dolphin Contact at www.planetpuna.com/Birth%20Talk%20Story/index.html .

Since Star's passing, we are looking forward to the results of this project which is now being continued under the capable hands of Kim Nelli who has now done similar pre-birth contacts with some 10 more couples so far. So we now have some 35 children who we like to think of as dolphin ambassadors.

Rearing Children with the Dolphins



Some of the Mom's in the pre-birth contact project

One aspect that has yet to be addressed is how we can raise the dolphin and human children together. Star, John and Toni Lilly suggested that one good way to attempt an interspecies communication was to ideally birth human babies and dolphin babies together and then raise them together so they come to know each other well. Perhaps the children (dolphin and human) will achieve a communication breakthrough.



JK (age 20) and Mom

Cultural Transmission and Dolphins in Human Care

Many facilities still have dolphins that were caught in the wild. Presumably, they have been taught their language and culture. We presume then, that they are able to teach the new dolphins born in human care. However, an increasing percentage of dolphins under human care are now born into the facilities. So we may ask – are they being taught their language and culture? To ensure that this is case we suggest that we ensure contact with many dolphins, especially the free ones, using technological means.

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One approach is something like a “Dolphin Skype” system that ideally allows a dolphin in human care to converse and see any other dolphin. One way to do this is to have communication stations across the planet comprising two hydrophones, two underwater speakers, and a visual display, along with dolphin operable controls, all linked via the internet. Since the dolphin has at least a 300 kHz sound production and reception band, there is sufficient bandwidth to allow us to can assign codes for the operation of many devices.

For example, Rody Green, at Lilly’s project Janus, developed a “*acoustic mouse*” for the dolphins. One frequency band moved a pointer on a computer screen in the X direction horizontally, and another frequency band moved the pointer in a Y or vertical axis. So the dolphins, by whistling two frequencies, could position the pointer anywhere on the screen. The dolphins were quite excited by this and played with it for hours! If this had been extended to having a *mouse-up* and *mouse-down* function, the dolphins could have drawn pictures!

As a form of enrichment such devices open many opportunities, including the capability of a dolphin to “*surf the net*”. One can easily devise numerous other devices a dolphin might operate such as various apps, robot arms, or 3-D printers. One can envision their habitats enriched by devices like gate’s, bubble machines, toys etc. - all acoustically operated.

This offers many possibilities for enrichment. Combining these devices with the dolphin Skype described earlier, one can envision dolphins operating devices at remote locations. One can envision interactive games which the dolphin can play with each other or with humans, or with groups of online dolphins or dolphins and humans. For example, they could learn chess or Go. Another class of dolphin operated devices might include remotely controlled toy fish, or toy dolphins.

An Acoustic window

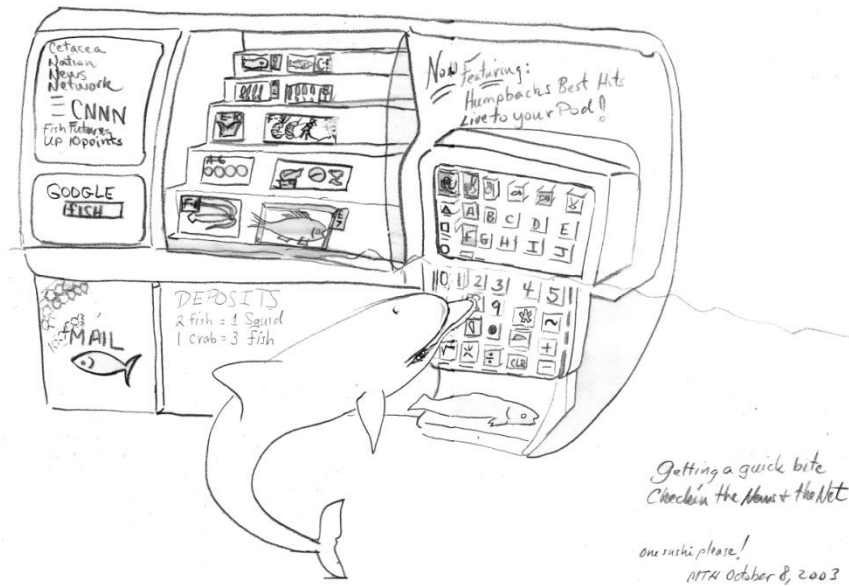
Imagine array of many hydrophones and high definition in 16 x 9 display about 4 feet on the site imagine a high-speed data link to another such device at a distant location.

The hydrophones are as small as possible and densely packed. They would be operated as both receivers and projectors cores on a 50/50 duty cycle. This means that half the time they would listen, and half the time produce sounds. If the hydrophones were switched from projecting to receiving at about 100 kHz then we would adequately reproduce sonic signals for the dolphin up to about 50 kHz, which is the central band of their reception and sound production.

Now suppose one of these acoustic windows is placed in front of a dolphin. Imagine that at the remote location, a fish is in front of it. Now, if the dolphin clicks, as in sonar, a wavefront will hit the screen to be sampled and transmitted to the remote window which would re-create the click at the remote location and project it into the water there. The click would reach the fish and be reflected back to the remote window, which would re-create the echo sound for the dolphin at the original location. The dolphin will hear the echo from the fish at the remote site! The dolphin could echolocate at the remote site. We can give the dolphin an acoustic window through which he could see the remote site. Conversely, a dolphin at the remote site could see the original site. Dolphins could then communicate using such a system.

One can also imagine a large visual display overlaid on hydrophone array so that they can see the remote site visually as well.

Such systems could be added to the basic dolphin Skype system described above. We feel that such systems added to the facilities for dolphins in human care, as well as a series of stations on shore lines and in open ocean sites could allow global communications among all the Cetacea, both free and in human care.



“Getting a quick bite and checking the News & the Net”

Note that there is:

CNNN – the Cetacean Nation News Network

New: Humpbacks’ greatest hits – live to your pod!

and a place to deposit fish or other food. (2 fish = 1 squid; 1 crab = 3 fish)

We can provide an “acoustic mouse” controller

(Prototyped by Roedy Green in Project Janus)

The Human Teaching Machine

As a result of the above developments, we envision two main outcomes: By listening into the dolphin conversations on the “Dolphin Skype” we may achieve a breakthrough in our understanding of the dolphin language; and even more important, we can configure a machine that is operated by the dolphins so that **they can teach us what they think we should know**. It is too early to know what these developments will look like.

We suggest, for example, that since 7 year old humans can become good programmers using the language LOGO, that something like this language could allow dolphins to become programmers. It is likely that current experts in computer interfaces and AI could configure such a system.

The future is an open from there on out. Perhaps we will see something like the scenario in Leo Szilard’s story *The Voice of the Dolphin* in which dolphin-human communication was accomplished because the dolphins were motivated by their love for “Zell’s Liver Paste” and within a couple years of this breakthrough the dolphins, as colleagues, were suggesting crucial physics experiments and sharing in Nobel Prizes.

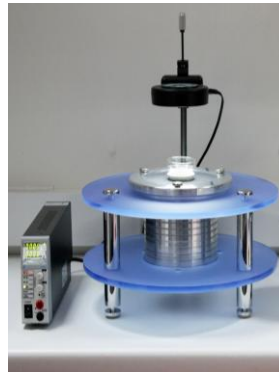
Finally, we present recent work that is leading perhaps to an understanding of how the dolphins are creating “*sonic shapes*” in the water, which they might be using for communication. Briefly, a dolphin echolocated on several shapes: a cross, a cube, a flower pot, and a man under water. Then recordings of these echolocation sounds were amplified and sent to a Cymascope in which a small puddle of water, in a dish, was vibrated by the dolphin sounds. Surprisingly, we found that a bas-relief shape of the object being echolocated appeared impressed on the water surface. We have little understanding at the moment of how these images form.



Objects echolocated by a dolphin



Dolphin echolocating on a cube



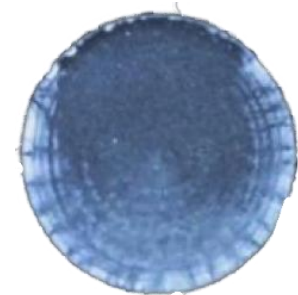
The Cymascope



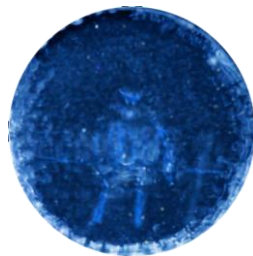
CymaGlyph of the cube



Dolphin echolocating on a man



Video frame before image



Video frame with man image



Man image lightened

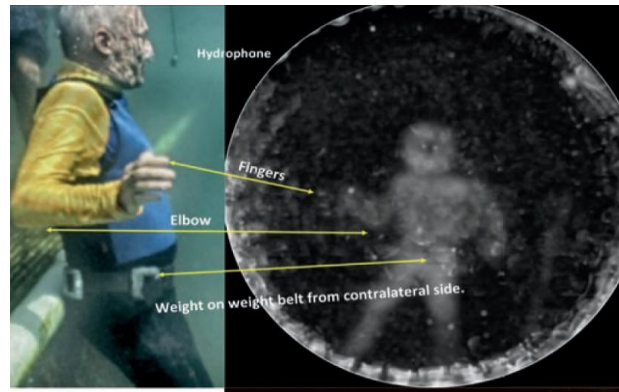
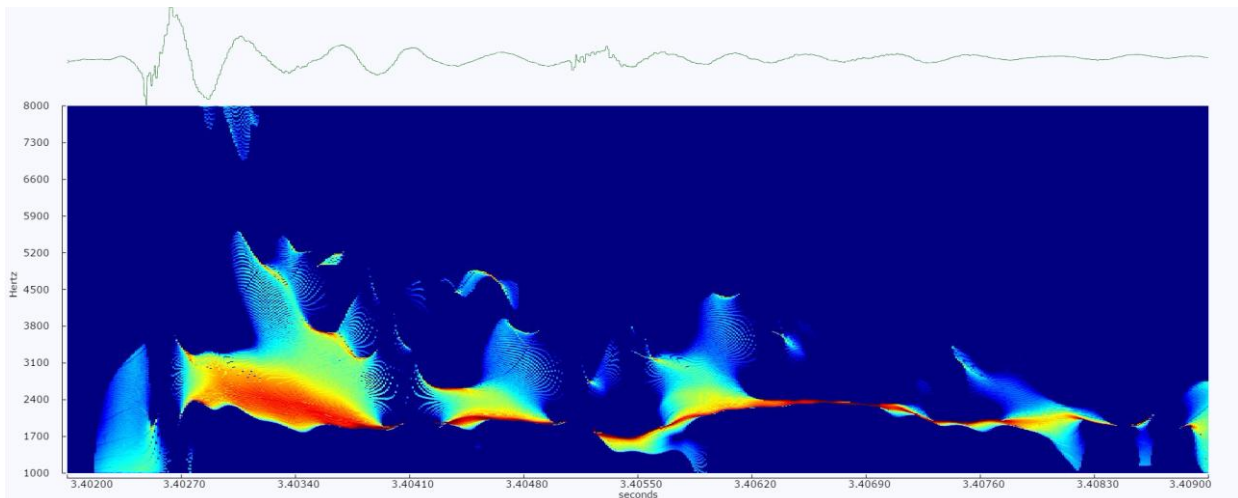


Photo of man compared to CymaGlyph of the man

The above figures summarize our results. As can be seen, echolocation sounds from the dolphins when imaged with the Cymascope recreate the objects being echolocated. This may arise from some special character of the dolphin sounds. It may be a quasi-holographic process. Somehow, the one dimensional time and amplitude signal is being converted to 3D shapes. Our research is ongoing.

One technique being utilized is Dr. John Kroeker's resonant spectrogram software which allows highly detailed sound analysis which has a resolution some 1000X better than the usual FFT analysis. An example analysis of a dolphin sound sample is shown below. At the top of the image is an oscillograph of the sound sample, and below, the resonant spectrogram of the sound where the red to blue color spectrum indicates the sound power at each time and frequency. This is a new frontier of sound analysis.



We include this example to indicate that we may soon decode significant aspects of dolphin communication and perhaps will understand important aspects of their language.

It is vitally important that those who seek to regulate our interactions with the dolphins and other Cetacea understand that we are on the verge of major advances in our attempts at communication. This is vastly important, and in our view, may be crucial to our survival and advancement as a species.

Therefore, any suggested rulings affecting our ability to interact with the Cetacea, either in facilities or free, must allow our growing understanding and partnership to advance.

We may be near the kind of communication and understanding that so many have sought over these preceding decades. The future looks bright and who can predict the results of full objective communication with the most intelligent beings on our planet, which we will achieve especially when we contact the Sperm whales, the largest brained and likely most intelligent creatures on our planet. Should this come about, our continuing and future partnership with the Cetacea promises great novelty as we continue our long and historic cooperation among our species.

We invite those who resonate with this great work to join us!

Current suggested members to invite:

Kingdom of Hawai'i
Dolphinville
Joan Ocean
Dolphin Academy
Dean and JoJo
SpeakDolphin.com
Dolphin Discovery
Dolphin Quest
Sealife Park
IMATA
Cetacean Commonwealth
Cetacean Nation
Sirius Institute
Dolphin Dance
Individuals
???

IDEA Citizen Science Initial Projects :

Spinner Project

Goal: Show that Spinners interacting with people is benign

Also: That interaction with people enriches dolphin lives

Also: Show that NOAA removing people from the dolphins is unilaterally ignoring their choice, sovereignty and agency... essentially violating their basic rights of sovereignty.

Methods

Personal logs from the captains to show increases in populations over the recent years

Examination of the local population by a marine mammal veterinarians to give them an official statement that they are healthy

Examination the local population by professional dolphin trainers to show they interactions are normal and enriching.

Environmental assessment Including:

starvation, runoff, pesticides, herbicides, other pollution, beach trash, plastic, toxoplasmosis, water quality, etc.

The Dolphin Choice Project

Do dolphins choose to be with humans?

1. Set up sightlines or buoys at two-step, Kealakekua Bay, Two Step and Ho'okena
2. Invite people only swim on their side.
3. Observe as many days as possible to find out:

- a. Do dolphins go to the human side?
 - b. Total dolphins
 - c. Number on dolphin side
 - d. Number on human side
 - e. When are they on each side across the day?
 - f. Interview people
4. Train people in dolphin etiquette which earns them a dolphin swim certificate perhaps issued under the auspices of the Cetacean Commonwealth
 5. All this is voluntary, give the people literature, a button, and shirts
 6. Assess the results:

Ask all the groups involved to send observers.

Dolphin discovery could send trainers and other personnel for an experience with free dolphins (this would enrich the lives of trainers which in turn would enrich the dolphin lives)

Then the **IDEA** certifies the results!

Ambassador Dolphin Project

Collect local and global knowledge about all the dolphins around the planet that interact with humans; then we can compile this **citizen science** globally.

Document all this with notes, data and an overall Filmed Documentary

THEN:

Send NOAA and DLNR a Temporary Restraining Order:

- 1) **ALL people of Hawaii are guaranteed access to the beach**
- 2) **ALL people of Hawaii and guest have the right to swim**
- 3) **Dolphins have a right to associate with humans by their free choice**
- 4) **Humans are aquatic – we demand protection under the MMPA and a permit exempting us from negligible “takes”**
- 5) **We declare our rights to be with our other-species friends**

¹ Rose Farrington to Michael Hson, 2013. Farrington lived with these people for two years.

² Igor Smirnoff, personal communication with Michael Hyson, 1987. He also reports that the water born babies developed 6 months faster over their first two years and may have some 150 grams more brain weight.

³ Elena Tonetti, personal communication with Michael Hyson, 1995.